

Serial No. 09/934,791

PATENT  
Docket No. 58027-012900**REMARKS**

Responsive to the Final Office Action of April 15, 2003, reconsideration of the above application is respectfully requested.

**1. Claim rejections under 35 USC 112:**

Claims 1, 6-7, 11, 16, 21-22, 26, and 31 have been amended to overcome rejections under 35 USC 112. Claim 32 has been cancelled. No new matter has been added to claims 1 and 16, since the thermally conductive nature of the InP heat spreading layers was already disclosed in the specification (e.g., page 7, paragraph 26).

**2. Claim rejections under 35 USC 102:**

Independent claims 1, 16, and 31 were rejected under 35 USC 102 as being anticipated by the newly cited prior art of Ramdani et al. (US. 6,121,068).

Specifically, the Examiner contends that the '068 patent discloses a first and a second layer, 31 and 37 respectively (col. 5, lines 24-26), that act as heat spreading layers.

The Applicants' respectfully point out the '068 patent discloses the first and second layers, 31 and 37, as being current spreading layers (col. 5, lines 12-14 and lines 24-26). These are not heat spreading layers as they were not designed to be thermally conductive to dissipate heat, for reducing the temperature of VCSELs, as the top current spreading layer is formed from InGaAsP (col. 5, lines 12-14), a material composition that would be quite suitable for current spreading applications, exclusively, but would negate any heat spreading benefits of the layer since it has a very low thermal conductivity.

In contrast, the heat spreading layers in the present invention are formed of thermally conductive InP (page 7, paragraph 26) for reducing the temperature of VCSELs. InP has a thermal conductivity that is more than 15 times greater than InGaAsP. The present claims emphasize that the thermally conductive InP cladding layers are used specifically in heat spreading applications. Such an inventive concept has not been present in other VCSELs, and, in particular in those VCSELs based on InGaAsP.

In view of the above, it is submitted that this application is now in good order for allowance, and such early action is respectfully solicited. Should matters remain which the

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Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone the Applicants' undersigned attorney.

Respectfully submitted,



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